POWER SUPPLY / DMX-512 LED DRIVER

User's manual

V.1.20

ENG

DTS

The Lighting Company

Code 03.LA.002

IMPORTANT SAFETY INFORMATION

Fire prevention:

Never locate the fixture on any flammable surface.
Minimum distance from flammable materials: 10 cm
Replace any blown or damaged fuses only with those of identical value
Connect the Power Supply to main power via a thermal magnetic circuit breaker

Prevention from electric shock:

High voltage is present inside the unit.
Unplug the unit prior to performing any operation which involves touching the inside of the unit.
This equipment must be grounded,do not connect to non-grounded supplies.
Use only AC supplies 195-265V, 50-60Hz
The unit should never be located in position exposed to rain or in areas of extreme humidity.
A good air ventilation is essential for proper equipment work.

Safety:

The external surface of the unit may exeed 50°C,never handle the unit until at least 5 minutes have elapsed since the unit was turned off.
Never install the unit in an enclosed area lacking sufficient air flow.
The ambient temperature should not exeed 40°C and should not be lower than -10°C

DESCRIPTION:

The Power supply / DMX-512 LED driver is a unit dedicated to the following LED products by D.T.S.:
*MR16 RGB LED lamp; MR16 full color LED lamp: D30 RGB LED projector:D30 full color LED projector
3 channels output DMX-512 Power interface, able to drive up to 12 x 1W RGB LED units.
3 x 350mA electronically dimmable led control outputs
Main Input voltage range is 195V - 265V, 50 - 60 HZ
It is possible to use this item through every DMX-512 mixer or by using the DTS InfraRed control

MAIN ELECTRICAL CHARACTERISTICS:

Input Voltage Range : Vin 195 - 265 Vac
Frequency : 50 - 60 HZ
Power Consumption Range :6 - 50 W
Power Factor (Pf) : 0.95 electronic PFC controller
Efficiency : 90% typical

Output:

Power Output Range :4,8 - 12W per channel
Output Current : 350 mA @ 100% per channel
Output Voltage : Vout 48V
Max Load (output) : 12 **x** MR16 RGB LED lamp or
12 x D30 RGB LED projector or 4 x MR16 full color LED lamp or 4 x D30 full color LED projecto
Min Load (output) : **3 x** MR16 RGB LED lamp

Control Input:

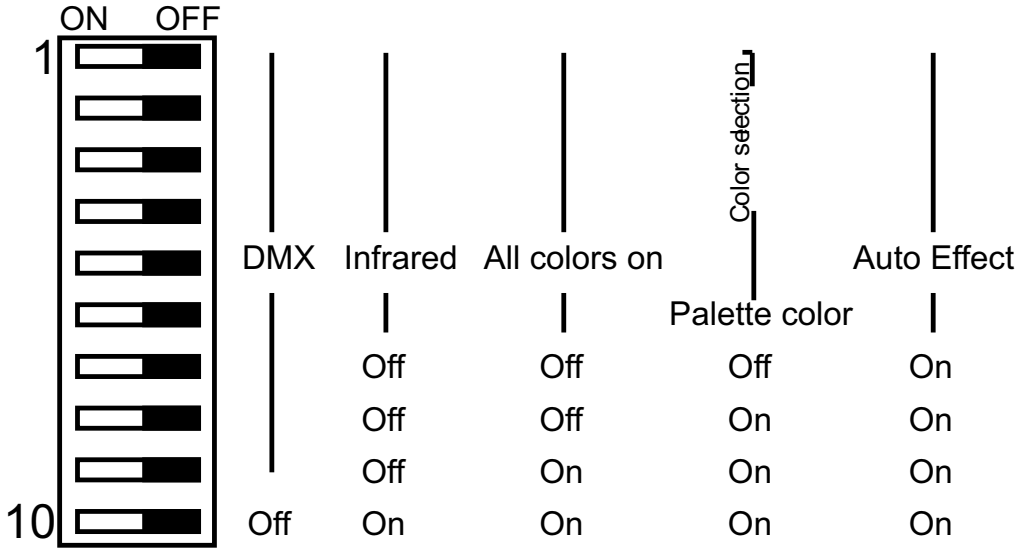
Control Signal : DMX 512
Dimming System :Constant Current PWM
Address Range : DMX 512 channels addressable by 9 DIP switches

APPLICATIONS:

Cinemas - Restaurants and pubs - Discoteques - Architectural - Interior and Exterior.

SPECIAL FUNCTIONS

By the activation of DIP number 10, some special functions are activated.
Those are: Infrared receiver, Automatic effect generator, Fixed colour palette preset.
In the table below is explained how the DIP Switches combination works.



DMX :
Activates the DMX mode, and the dip switches from number one up to nine are used for address selection.

INFRARED:
activates the remote control , and can only execute incoming commands from the infrared control

ALL COLORS ON:
all channels are activated at the maximum level , all colors are on.

AUTO EFFECT:
Activates one of internal pre programmed sequence that changes colors and loops as long as the board is supplied

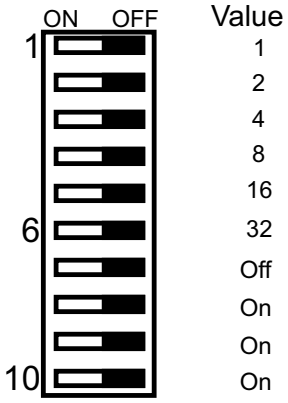
DMX PROTOCOL

DMX CHANNEL	DESCRIPTION
1	GREEN
2	RED
3	BLUE
4	NOT USED
5	STROBE SYNC
6	STROBE
7	STROBE DELAY
8	NOT USED

COLOR PALETTE

In the table is shown the address of each color
combination.
The color combination will run automatically every time the power supply is turned on.
The palette number is the address in binary code obtained by the sum of the first 6 DIP switches

Dip switch



Making a sum of DIP switches,you can have the desired palette address.
Example:To select Green color (palette n°5)
You have to switch on DIP n° 1 and DIP n°3

Palette numb.	Red	Green	Blue	Amber		
0	0	0	0	0	Off	
1	64	0	0	0	Red	No strobo
2	128	0	0	0	Red	No strobo
3	192	0	0	0	Red	No strobo
4	255	0	0	0	Red	No strobo
5	0	64	0	0	Green	No strobo
6	0	128	0	0	Green	No strobo
7	0	192	0	0	Green	No strobo
8	0	255	0	0	Green	No strobo
9	0	0	64	0	Blu	No strobo
10	0	0	128	0	Blu	No strobo
11	0	0	192	0	Blu	No strobo
12	0	0	255	0	Blu	No strobo
13	64	64	0	0	Yellow	No strobo
14	128	128	0	0	Yellow	No strobo
15	192	192	0	0	Yellow	No strobo
16	255	255	0	0	Yellow	No strobo
17	64	0	64	0	Magenta	No strobo
18	128	0	128	0	Magenta	No strobo
19	192	0	192	0	Magenta	No strobo
20	255	0	255	0	Magenta	No strobo
21	0	64	64	0	Cyan	No strobo
22	0	128	128	0	Cyan	No strobo
23	0	192	192	0	Cyan	No strobo
24	0	255	255	0	Cyan	No strobo
25	64	64	64	0	White	No strobo
26	128	128	128	0	White	No strobo
27	192	192	192	0	White	No strobo
28	255	255	255	0	White	No strobo
29	0	0	0	64	Amber	No strobo
30	0	0	0	128	Amber	No strobo
31	0	0	0	192	Amber	No strobo
32	0	0	0	255	Amber	No strobo
33	64	0	0	64	Red + Amber	No strobo
34	128	0	0	128	Red + Amber	No strobo
35	192	0	0	192	Red + Amber	No strobo
36	255	0	0	255	Red + Amber	No strobo
37	0	64	0	64	Green + Amber	No strobo
38	0	128	0	128	Green + Amber	No strobo
39	0	192	0	192	Green + Amber	No strobo
40	0	255	0	255	Green + Amber	No strobo

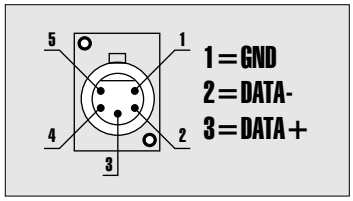
POWER SUPPLY WIRING DIAGRAM

RGB output
6-pin Female (Rj12)

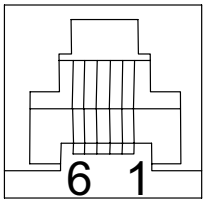
DMX IN-OUT connectors

Mains 195-265 Vac
50-60 Hz

STANDARD DMX 512 CONTROLLER



Dmx address setting

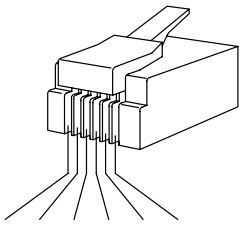


6-pin Female (RJ12)

Pin 1 = RED +
Pin 2 = RED -
Pin 3 = GREEN +
Pin 4 = GREEN -
Pin 5 = BLUE +
Pin 6 = BLUE -

RJ12 : 6P6C

6P6C indicates 6 positions 6 cables

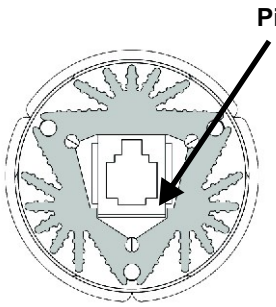


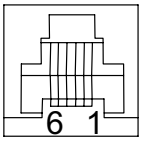
1 2 3 4 5 6

6-pin Male (RJ12)
Modular Plug

LEDs cabling connection can be done with a standard UTP TIA/EIA 568-A category 3 cable.
The maximum distance between power supply and the last LED lamp in the line should not exceed 100 meters.
For short distance connections (less than 20 meters), you can also use a standard 6 conductors telephone flat cable

POWER SUPPLY WIRING CONNECTIONS





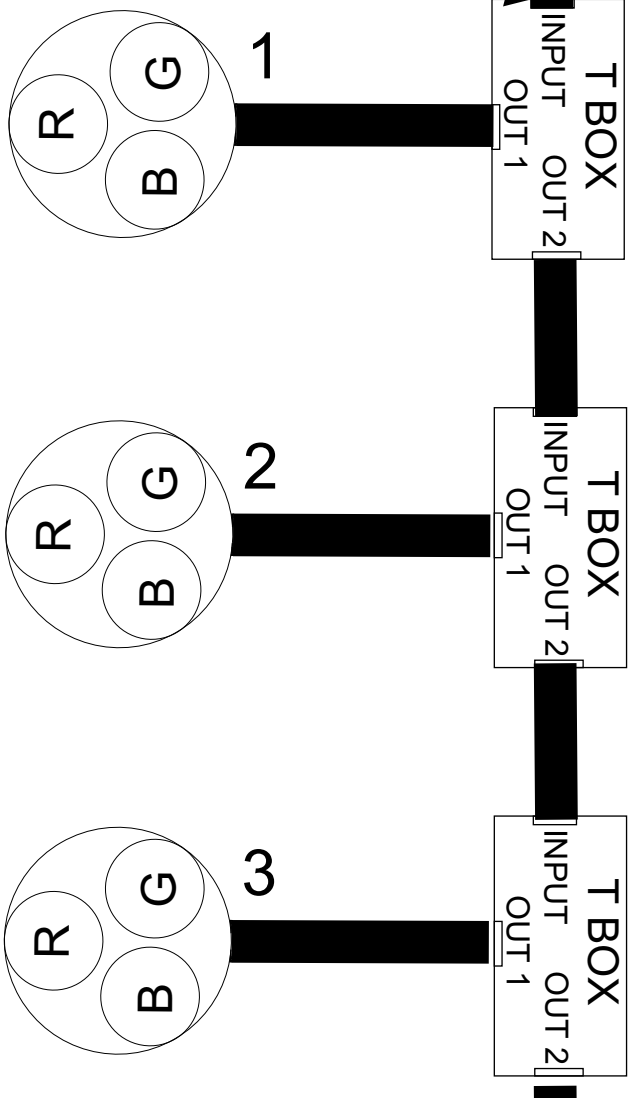
6-pin Female (RJ12)

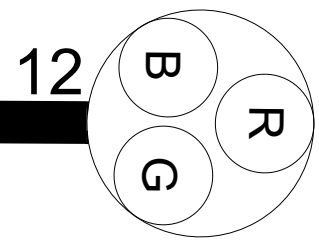
D.T.S. T-BOX

CODE 03.LA001

INPUT **OUT 2**

OUT 1





IMPORTANT:

The minimum number of MR16 RGB 3W LED lamps connectable to the D.T.S. Power supply is 3 pcs.

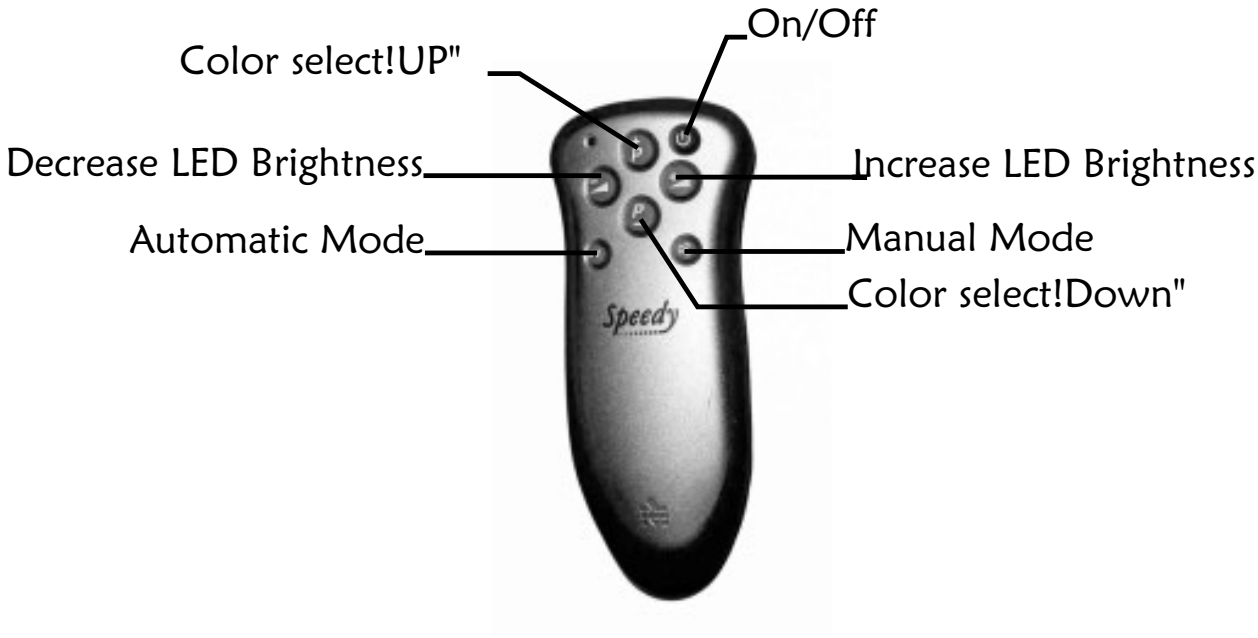
The maximum number of MR16 RGB 3W LED lamps connectable to the D.T.S. Power supply is 12 pcs.

Never plug the cable coming from the Power supply into OUT 1 or OUT 2 of the T-BOX when other MR16 lamps are connected, because a wrong connection can seriously damage the lamps.

Never plug in a new MR16 lamp when the power supply is turned on.

MR16 RGB Spot lenses (Code 0505L004)
MR16 RGB Medium flood lenses (Code 0505L005)
MR16 RGB Wide flood lenses (Code 0505L006)

REMOTE CONTROL



This remote control need to be set up at the first use,for right infrared protocol,please proceed as follows:

1. Insert the battery ,press AUTOMATIC and MANUAL keys at the same time and hold until the red led on remote control Is blinking (3 seconds minimum required) then
2. Push in this sequece the key P+ and P- : **+ - + + + - + +** at the end of the sequence the red led blinks 3 times
3. Now the remote control is ready for use.

Using the remote control:

Push ON/OFF to turn ON and OFF all leds at the same time, or to continue a previously automatic sequence if activated.

Manual Control allows the user to select the color (RED, GREEN or BLUE) by pushing P+ or P- buttons . Everytime you push the buttons a flash will appear on the selected color, either RED ,GREEN or BLUE. Push P+ or P- once more to increase or decrease the brightness of the selected color

Automatic control will run a pre-programmed sequence.The sequence will go through all colors one by one.To exit from automatic mode press MANUAL control.

INFRARED REMOTE CABLE

This cable with infrared sensor must be connected on CN 2 (infrared port) of the power supply and can not be longer than actual lenght.
WARNING: the power supply must be turned off before connecting the cable.

The receiver must be visible by remote control and protected from direct sun light.

Setting up the infrared receiver:
Plug the cable on CN3 of the power supply, and set to ON position DIP n° 10.
Turn on the board; all leds will be turned OFF.
Choose the desired functions using the remote control

CN 2
Remote infrared connector

Note

Note

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